REMARKS

Applicant would like to thank the Examiner for the careful consideration the Examiner has given the present application. The undersigned attorney has taken over prosecution of the present application and has included herewith a copy of a revocation of the prior power of attorney and a new power of attorney and change of correspondence address.

Claims 1-49 are currently pending in the present application. In this Amendment, Applicant has amended claims 1, 3-6, 10, 13-15, 33, 34, 36, 39, 43, 45 and 47-49, canceled claims 2, 7, 12 and 35 and added a new claim 50. Reconsideration of the application in its current format is hereby requested.

In the Office action, the Examiner has rejected claims 1-49 under 35 U.S.C. §102(e) as being anticipated by U.S. Patent No. 6,369,461 to Jungreis et al. For at least the reasons set forth below, Applicant traverses this rejection.

The present invention is directed to a power system having a boost converter connected to a DC power source (such as a fuel cell) and a charge/discharge controller connected between the boost converter and a battery. The boost converter is operable to control the flow of power from the DC power source to a DC bus, based on the power available from the DC power source. For example, if an increase in an external load occurs and the DC power source does not have the required power available (e.g. the DC power source is a fuel cell and the chemistry of the fuel cell needs to be adjusted, e.g. to increase the amount of fuel), the boost converter limits the amount of power drawn from the DC power source, which helps protect the DC power source. As a result, the amount of DC power provided by the DC power source to the DC bus is limited, which causes the voltage on the DC bus

to dip, which causes the charge/discharge controller to permit power from the battery to flow to the DC bus to meet the increase in the external load until the DC power source is able to produce more power. Thus, the boost converter controls the supply of DC power from the DC power source to the DC bus and, based upon this supply, the charge/discharge controller controls the power from the battery to the DC bus.

The Jungreis et al. '461 patent discloses a system having a fuel cell 10, a DC-to-DC boost converter 12, a varying DC bus 14, a DC-to-AC inverter 16, a battery 22 and a buck converter 24. The buck converter 24 is connected between the fuel cell 10 and the battery 22 and is operable to provide charging current to the battery 22. The boost converter 12 is connected between the fuel cell 10 and the battery 22 and is operable to control the flow of power from the battery 22 to the varying DC bus. Neither the buck converter 24, nor the boost converter 12 are disclosed as being operable to control the flow of power from the fuel cell 10 to the varying DC bus 14, as required by the present invention. Thus, in the event of a load change, the system of the Jungreis et al. '461 patent does not control the power from the fuel cell 10. Rather, the system of the Jungreis et al. '461 patent controls the power from the battery 22. This is explicitly set forth in column 2, lines 21-24 of the Jungreis et al. '461 patent: "*This boost converter allows full control of the battery power, so that the power drawn from the fuel call can be gradually increased as the fuel supply is gradually increased.*"

Since the Jungreis et al. '461 patent does not control the supply of DC power from the fuel cell 10 to the varying DC bus 14, let alone control the supply based on the amount of power available from the fuel cell 10, it is clear that the Jungreis et al. '461 patent fails to show or suggest:

"*controlling the amount of DC power provided from the DC power source to the DC bus based on the DC power available from the DC power source*", as is presently recited in amended independent claims 1 and 10;

"*a converter coupled to the DC bus and to the DC power source that regulates power from the DC power source based on the DC power available from the DC power source*", as is presently recited in amended independent claim 15; and

a "*boost converter*" that is "*operable to regulate power provided from the fuel cell to the DC bus based on the DC power available from the DC power source*", as is presently recited in amended independent claim 39.

In addition to the foregoing, both the boost converter 12 of the Jungreis et al. '461 patent (which controls power from the battery 22) and the buck converter 24 (which provides charging current to the battery 22) are connected between the fuel cell 10 and the battery 22. Thus, it is clear that the Jungreis et al. '461 patent also fails to show or suggest (with emphasis added):

"*a boost converter having an input connected to the fuel cell and* ***an output connected to the controller device***", as is presently recited in amended independent claim 39.

For at least the foregoing reasons, Applicant submits that the Jungreis et al. '461 patent fails to show or suggest independent claims 1, 10, 15 and 39 and, thus, dependent claims 3-6, 8, 9, 11-14, 16-34, 37, 38 and 40-50.

The Examiner has also rejected claims 1-3, 5-7, 9-38 and 49 under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 4,728,808 to Bet-Esh et al., and has rejected claims 4, 8 and 39-48 under 35 U.S.C. §103(a) as being unpatentable over

the Bet-Esh et al. patent in view of the Jungreis et al. '461 patent. For at least the reasons set forth below, Applicant traverses these rejections.

The Bet-Esh et al. patent is directed to a UPS system having a first DC voltage source 6 (which is an AC-to-DC converter), a second DC voltage source 8 (which includes a battery 24) and a DC sensing and controlling circuit 12. When the circuit 12 senses a voltage deviation, the second voltage source 8 (battery 24) is controlled to reduce or increase the voltage, as the case may be. This is graphically shown in the drawings by the control line 14. The first DC voltage source 6 is not controlled, as is graphically shown in the drawings by the absence of a control line between the first DC voltage source 6 and the circuit 12. Thus, the Bet-Esh et al. patent discloses controlling the power from the battery 24, but <u>not</u> the power from the first DC voltage source 6.

Since the Bet-Esh et al. patent does not control the supply of DC power from the first DC voltage source 6, let alone control the supply based on the amount of power available from the first DC voltage source 6, it is clear that the Bet-Esh et al. patent fails to show or suggest:

> "*controlling the amount of DC power provided from the DC power source to the DC bus based on the DC power available from the DC power source*", as is presently recited in amended independent claims 1 and 10;
>
> "*a converter coupled to the DC bus and to the DC power source that regulates power from the DC power source based on the DC power available from the DC power source*", as is presently recited in amended independent claim 15; and
>
> a "*boost converter*" that is "*operable to regulate power provided from the fuel cell to the DC bus based on the DC power available from the DC power source*", as is presently recited in amended independent claim 39.

In addition to the foregoing, the battery 24 of the Bet-Esh et al. patent receives charging power from the battery charger 26 (which is connected to an AC power source) and not from the first DC power source 6, as is graphically shown in the drawings. Thus, it is clear that the Bet-Esh et al. patent also fails to show or suggest (with emphasis added):

> "*providing DC power from the DC power source to the battery*", as is recited in amended independent claim 10; and
>
> a "*boost converter having an input connected to the fuel cell*" wherein "*the boost converter provides a charging current to the battery*", as is presently recited in amended independent claim 39.

For at least the foregoing reasons, Applicant submits that the Bet-Esh et al. patent fails to show or suggest independent claims 1, 10, 15 and 39 and, thus, dependent claims 3-6, 8, 9, 11-14, 16-34, 37, 38 and 40-50. Since the Bet-Esh et al. patent suffers from the same deficiencies (with regard to the claims) as the Jungreis et al. '461 patent, Applicant submits that the combination of the Bet-Esh et al. patent and the Jungreis et al. '461 patent also fails to show or suggest independent claims 1, 10, 15 and 39 and, thus, dependent claims 3-6, 8, 9, 11-14, 16-34, 37, 38 and 40-50.

Based on the foregoing, it is respectfully submitted that the present application is in a condition for allowance and notice to that effect is hereby requested. If it is determined that the application is not in a condition for allowance, the Examiner is invited to initiate a telephone interview with the undersigned attorney to expedite prosecution of the present application.

If there are any additional fees resulting from this communication, please charge same to our Deposit Account No. 050877.

Respectfully submitted,

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